

CLAIMS:

1. An ultrasonic probe to be used when connected to an external apparatus main body, said probe comprising:

5 a transducer array including plural ultrasonic transducers;

connecting means for connecting ultrasonic transducers selected from among said plural ultrasonic transducers to said external apparatus main body; and

10 identification information holding means for holding identification information on said ultrasonic probe, said identification information being associated with arrangement information and/or characteristic information on said selected ultrasonic transducers within said transducer array.

2. An ultrasonic probe according to claim 1, wherein said
15 connecting means includes wiring and electrodes for supplying the identification information on said ultrasonic probe held by said identification information holding means to said external apparatus main body.

3. An ultrasonic probe to be used when connected to an
20 external apparatus main body, said probe comprising:

a transducer array including plural ultrasonic transducers; and

a connector, having plural electrodes, for connecting ultrasonic transducers selected from among said plural
25 ultrasonic transducers to said external apparatus main body, wherein at least two kinds of connecting relationships between said selected ultrasonic transducers and said plural

electrodes are set up in regard to plural ultrasonic probes.

4. An ultrasonic transmitting and receiving apparatus to be used when connected to an ultrasonic probe including a transducer array including plural ultrasonic transducers, connecting means for connecting ultrasonic transducers selected from among said plural ultrasonic transducers to an ultrasonic transmitting and receiving apparatus main body, and identification information holding means for holding identification information, said apparatus comprising:

10 plural transmitting circuits for respectively generating plural driving signals to be supplied to said ultrasonic probe so as to transmit an ultrasonic beam;

plural receiving circuits for respectively processing plural detection signals outputted from said ultrasonic probe which has received an ultrasonic echo; and

15 control means for controlling delay amounts of the plural driving signals in said plural transmitting circuits and/or delay amounts of the plural detection signals in said plural receiving circuits in correspondence with the ultrasonic probe identified on the basis of the identification information.

5. An ultrasonic transmitting and receiving apparatus according to claim 4, wherein said control means calculates delay amounts on the basis of arrangement information and/or characteristic information on said selected ultrasonic transducers with regard to plural ultrasonic probes in advance, and controls recording means to record delay amount tables

in correspondence with the identification information on the respective ultrasonic probes.

6. An ultrasonic transmitting and receiving apparatus according to claim 5, wherein said control means controls
5 said recording means to read out a delay amount table corresponding to the identification information supplied by said connecting means.

7. An ultrasonic transmitting and receiving apparatus to be used when connected to an ultrasonic probe including a
10 transducer array including plural ultrasonic transducers, connecting means for connecting ultrasonic transducers selected from among said plural ultrasonic transducers to an ultrasonic transmitting and receiving apparatus main body, and identification information holding means for holding
15 identification information, said apparatus comprising:

plural transmitting circuits for respectively generating plural driving signals to be supplied to said ultrasonic probe so as to transmit an ultrasonic beam;

plural receiving circuits for respectively processing
20 plural detection signals outputted from said ultrasonic probe which has received an ultrasonic echo; and

control means for controlling amplitudes and/or waveforms of the plural driving signals in said plural transmitting circuits in correspondence with the ultrasonic
25 probe identified on the basis of the identification information.

8. An ultrasonic transmitting and receiving apparatus to

be used when connected to an ultrasonic probe including a transducer array including plural ultrasonic transducers, connecting means for connecting ultrasonic transducers selected from among said plural ultrasonic transducers to
5 an ultrasonic transmitting and receiving apparatus main body, and identification information holding means for holding identification information, said apparatus comprising:

plural transmitting circuits for respectively generating plural driving signals to be supplied to said
10 ultrasonic probe so as to transmit an ultrasonic beam;

plural receiving circuits for respectively processing plural detection signals outputted from said ultrasonic probe which has received an ultrasonic echo; and

control means for controlling gains and/or bandwidths
15 in said plural receiving circuits in correspondence with the ultrasonic probe identified on the basis of the identification information.